

## 1.0 Ambrosia Lake, New Mexico, Disposal Site

### 1.1 Compliance Summary

The Ambrosia Lake Disposal Site, inspected on May 14, 2003, was in good condition. A small depression is present on the disposal cell top but is not affecting the integrity or performance of the cell. Deep-rooted vegetation observed on and around the cell cover was cut and treated with herbicide. Trespassing was evident by the presence of vehicle tracks along the apron and on the cell top. Inspectors identified no requirement for a follow-up or contingency inspection.

### 1.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Ambrosia Lake, New Mexico, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I disposal site are specified in the *Long-Term Surveillance Plan for the Ambrosia Lake, New Mexico, Disposal Site* (DOE/AL/62350–211, Rev. 1, U.S. Department of Energy [DOE], Albuquerque Operations Office, July 1996) and in procedures established by the DOE office at Grand Junction to comply with requirements of Title 10 *Code of Federal Regulations* Part 40.27 (10 CFR 40.27). Table 1–1 lists these requirements.

Table 1–1. License Requirements for the Ambrosia Lake, New Mexico, Disposal Site

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Section 6.0	Section 1.3.1
Follow-up or Contingency Inspections	Sections 6.0 and 7.0	Section 1.3.2
Routine Maintenance and Repairs	Section 8.0	Section 1.3.3
Ground Water Monitoring	Section 5.0	Section 1.3.4
Corrective Action	Section 9.0	Section 1.3.5

### 1.3 Compliance Review

#### 1.3.1 Annual Inspection and Report

The disposal site, located north of Grants, New Mexico, was inspected on May 14, 2003. Results of the inspection are described below. Features and photograph locations (PLs) mentioned in this report are shown on Figure 1–1. Numbers in the left margin of this report refer to items summarized in the Executive Summary table.

##### 1.3.1.1 Specific Site Surveillance Features

**Access Road, Entrance Sign, and Perimeter Signs**—The disposal site is accessed via a gravel road that leads to the site (and beyond) and is approximately 1 mile from New Mexico State Highway 509. There is a locked gate across this road where it leaves Highway 509 because the road leads to private mining and grazing interests that lie farther to the east. Numerous locks are connected in series to allow other users passage through the gate. The access road passes through the DOE-owned property along the south boundary of the site.

The entrance and all perimeter signs were in good condition. Two perimeter signs along the northern property boundary had rotated on their posts; the movement most likely was caused by prevailing winds. Inspectors realigned the signs to their proper position. Future inspections will continue to monitor the condition of the signs.

**Site Markers, Survey and Boundary Monuments**—The two granite site markers, three combined survey and boundary monuments, and five additional boundary monuments were all undisturbed and in excellent condition.

**Monitor Wells**—Two monitor wells remain at this site. Both wells were inspected and found to be secure and in excellent condition.

**Mine Vents**—Two mine vent shafts, associated with abandoned underground mines, are within the site boundary; a third vent is west of the site within DOE's restrictive easement that prohibits mining. The mine vent north of the disposal cell is the only one that has a spot-welded cover that can be considered a permanent closure. The other two vents have bolted-on covers that do not constitute a permanent closure. All vents were secure at the time of the inspection.

### 1.3.1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into four areas referred to as transects: (1) the riprap-covered top of the disposal cell; (2) the riprap-covered side slopes and apron of the cell; (3) the graded and revegetated area between the disposal cell and the site perimeter; and (4) the outlying area.

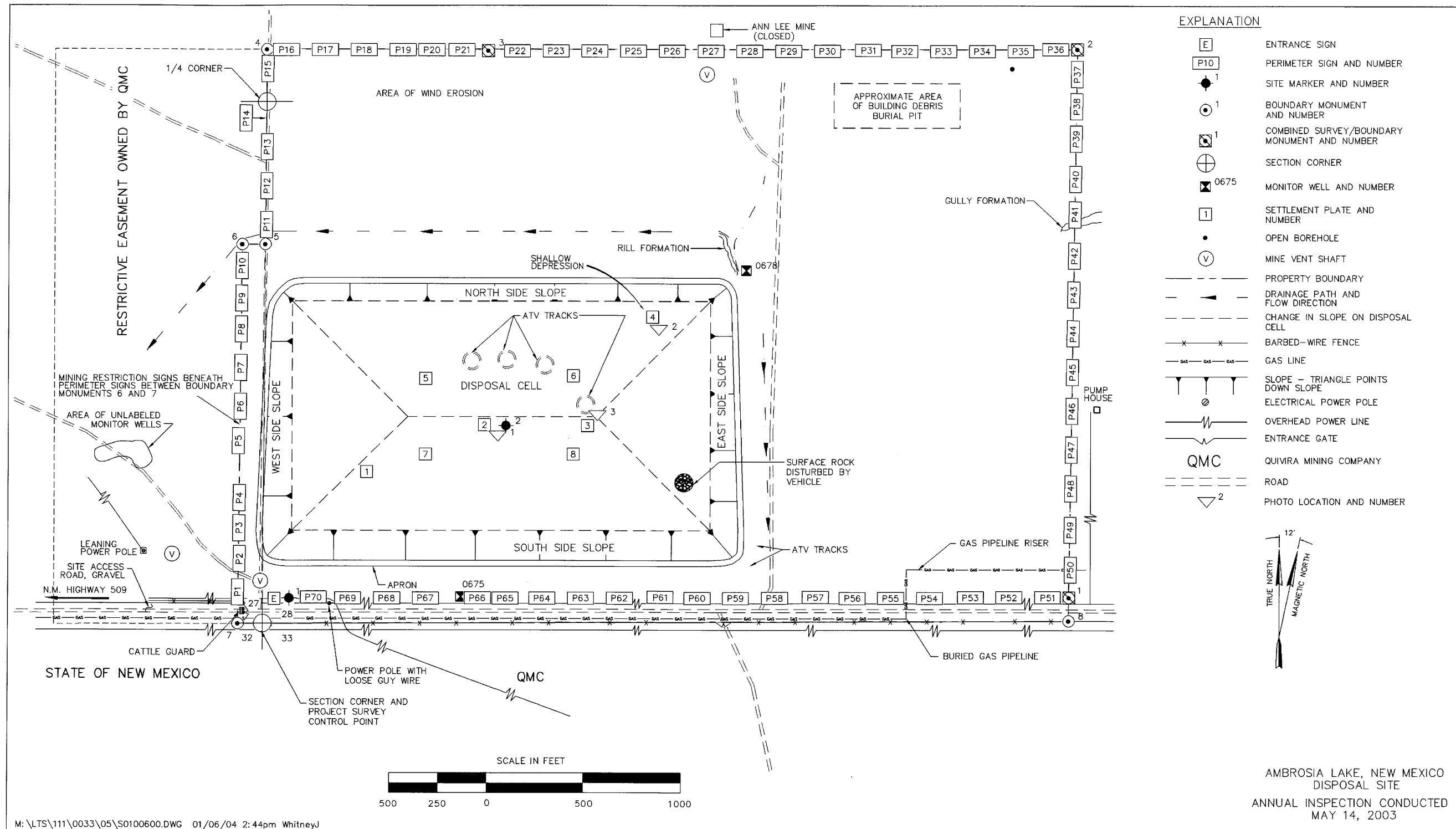
**Top of Disposal Cell**—The top of the disposal cell generally was in good condition (PL-1). With the exception of one location there was no evidence of cracking, settling, slumping, or erosion. A small shallow depression around settlement plate SP-4 was first noted during the 1997 inspection; however, there has been no evidence to suggest the depression holds water. At the time of the 2003 annual inspection, the subsidence was estimated to measure approximately 1 foot in depth (PL-2). The depression will continue to be monitored to determine if it is increasing and to ensure that the integrity and performance of the cell cover is maintained. The elevation of SP-4 and the diameter of the depression will be surveyed in 2004.

1A

1B

Four-wing saltbush shrubs, a deep-rooted plant, noted during the 2002 site inspection were cut and treated with herbicide prior to the 2003 inspection. Only one of this type of shrub was noted during the 2003 inspection, and it was cut and treated with herbicide. Several clumps of grass were growing on the cell top where windblown sand is accumulating in the riprap.

Trespassing was evident on top of the disposal cell. An all-terrain vehicle (ATV) had been driven to the top of the cell and used to mark four circles with diameters between 40 and 60 feet (PL-3). Another area of surface disturbance was noted near the southeast corner of the cell top. The tracks were very shallow and do not impair the integrity or performance of the cover.



**Side Slopes and Apron**—The side slopes and apron were in excellent condition and showed no evidence of cracking, settling, slumping, or erosion. The apron was dry and there was no evidence of animal burrowing.

- 1C Several tamarisk shrubs, a deep-rooted plant, identified along the south apron during the 2002 inspection were cut and treated with herbicide prior to the 2003 inspection. New growth found during the 2003 inspection also was cut and treated.

Tracks from an ATV were noted along the apron on the south and east sides of the disposal cell. Unauthorized access and trespass on DOE property will continue to be monitored.

**Graded and Revegetated Site Area**—In general, site vegetation was healthier than vegetation in the surrounding areas. Some areas were windswept with little growth, while other areas had excellent coverage. There was evidence of cattle grazing adjacent to the disposal cell and in the outlying portions of the DOE property. To date, grazing in the revegetated areas of the site has not been a problem. The perennial grasses planted in the graded areas adjacent to the disposal cell are well established.

Rills and gullies within the DOE property north and east of the disposal cell have been monitored for several years. These erosional features, unchanged from the previous inspection, currently do not present a threat to the performance or integrity of the disposal cell because headward erosion is away from the cell and sediment deposition is not expected to reach the apron.

**Outlying Area**—The area within 0.25 mile of the site boundary was inspected and found to be unchanged from the previous inspection. There is no activity that would impact the site.

### 1.3.2 Follow-up or Contingency Inspections

No follow-up or contingency inspections were required in 2003.

### 1.3.3 Routine Maintenance and Repairs

Deep-rooted shrubs were cut and treated with herbicide after the 2002 inspection and during the 2003 inspection, and two perimeter signs were realigned during the inspection.

### 1.3.4 Ground Water Monitoring

- 1D The Long-Term Surveillance Plan establishes that ground water monitoring is not required at this site because (1) the ground water is heavily contaminated from underground uranium mining and naturally occurring mineralization, and (2) the uppermost aquifer is of limited use due to low yield. However, at the request of the New Mexico Environment Department, DOE conducts limited monitoring at two locations. Monitor well MW-0675 is completed in the alluvium, and monitor well MW-0678 is completed in the uppermost sandstone unit. DOE will sample these locations once every third year, for up to 30 years, and will evaluate the results after every third sampling event. The first post-closure sampling event was conducted in 2001.

### 1.3.5 Corrective Action

Corrective action is action taken to correct out-of-compliance or hazardous conditions that create a potential health and safety problem or that may affect the integrity of the disposal cell or compliance with 40 CFR 192.

No corrective action was required in 2003.

### 1.3.6 Photographs

Photograph Location Number	Azimuth	Description
PL-1	35	Site marker SM-2 at the center of the cell cover.
PL-2	320	Depression centered around settlement plate SP-4.
PL-3	315	Circular-shaped vehicular disturbance on the north facet of the cell cover.



*AMB 5/2003. PL-1. Site marker SM-2 at the center of the cell cover.*





*AMB 5/2003. PL-2. Depression centered around settlement plate SP-4.*



*AMB 5/2003. PL-3. Circular-shaped vehicular disturbance on the north facet of the cell cover.*

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